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U.S. DEPARTMENT OF TRANSPORTATION
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DEPARTMENT OF TRANSPORTATION

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Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2004-18024; Directorate Identifier 2003-NE-39-AD]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce (1971) Limited, Bristol Engine Division Model Viper Mk.601-22 Turbojet Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to supersede an existing airworthiness directive (AD) for Rolls-Royce (1971) Limited, Bristol Engine Division (RR) model Viper Mk.601-22 turbojet engines. That AD currently requires reducing the life of certain 1st stage turbine rotor blades from 7,000 hours time-in-service (TIS) to 4,600 hours TIS, and provides a drawdown schedule for blades that have already exceeded the new reduced life limit. This proposed AD would require the same actions but changes certain compliance times to be in agreement with RR Alert Service Bulletin (ASB) No. 72-A184, dated January 2001. This proposed AD results from comments received on AD 2004-13-03, that the AD is unnecessarily more restrictive than the requirements in the associated RR ASB No. 72-A184. We are proposing this AD to prevent multiple failures of 1st stage turbine rotor blades that could result in a dual-engine shutdown.

DATES: We must receive any comments on this proposed AD by [insert date 60 days after date of publication in the FEDERAL REGISTER].

ADDRESSES: Use one of the following addresses to submit comments on this proposed AD.

- DOT Docket web site: Go to <http://dms.dot.gov> and follow the instructions for sending your comments electronically.
- Government-wide rulemaking web site: Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically.
- Mail: Docket Management Facility; US Department of Transportation, 400 Seventh Street, S.W., Nassif Building, Room PL-401, Washington, DC 20590-001.
- Fax: (202) 493-2251.
- Hand Delivery: Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street, S.W., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

You can get the service information identified in this proposed AD from Rolls-Royce Limited, Bristol Engines Division, Technical Publications Department CLS-4, P.O. Box 3, Filton, Bristol, BS34 7QE England; telephone 117-979-1234, fax 117-979-7575.

You may examine the comments on this proposed AD in the AD docket on the Internet at <http://dms.dot.gov>.

FOR FURTHER INFORMATION CONTACT: Ian Dargin, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone (781) 238-7178; fax (781) 238-7199.

SUPPLEMENTARY INFORMATION:

Docket Management System (DMS)

We have implemented new procedures for maintaining AD dockets electronically. As of May 17, 2004, we posted new AD actions on the DMS and assigned a DMS docket number. We track each action and assign a corresponding Directorate identifier. The DMS docket No. is in the form "Docket No. FAA-200X-XXXXX." Each DMS docket also lists the Directorate identifier ("Old Docket Number") as a cross-reference for searching purposes.

Comments Invited

We invite you to submit any written relevant data, views, or arguments regarding this proposal. Send your comments to an address listed under ADDRESSES. Include "Docket No. FAA-2004-18024; Directorate Identifier 2003-NE-39-AD" in the subject line of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the proposed AD. We will consider all comments received by the closing date and may amend the proposed AD in light of those comments.

We will post all comments we receive, without change, to <http://dms.dot.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this proposed AD. Using the search function of the DMS web site, anyone can find and read the comments in any of our dockets, including the name of the individual who sent the comment (or signed the comment on behalf of an association, business, labor union, etc.). You may review the

DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477-78) or you may visit <http://dms.dot.gov>.

Examining the AD Docket

You may examine the docket that contains the proposal, any comments received and any final disposition in person at the DMS Docket Offices between 9:00 a.m. and 5:00 p.m., Monday through Friday, except Federal holidays. The Docket Office (telephone (800) 647-5227) is located on the plaza level of the Department of Transportation Nassif Building at the street address stated in ADDRESSES. Comments will be available in the AD docket shortly after the DMS receives them.

Discussion

On June 16, 2004, the FAA issued AD 2004-13-03, Amendment 39-13684 (69 FR 34563, June 22, 2004). That AD requires reducing the life of certain 1st stage turbine rotor blades from 7,000 hours TIS to 4,600 hours TIS, and provides a drawdown schedule for blades that have already exceeded the new reduced life limit. That AD was the result of the manufacturer's investigations into failures of 1st stage turbine rotor blades. That condition, if not corrected, could result in multiple failures of 1st stage turbine rotor blades that could result in a dual-engine shutdown.

Comments Received Since AD 2004-13-03 was Issued

Since we issued final rule; request for comments AD 2004-13-03, we have considered the comments received.

Paragraph (g)(4) in Table 1 is More Restrictive Than the SB

One commenter requests that we revise paragraph (g)(4) in Table 1 so that the limits are only applicable to engines with 5,800 hours TIS or more. As currently written,

that paragraph is more restrictive than RR ASB No. 72-A184, dated January 2001, and not consistent with it.

We agree. Based on paragraph (g)(4) of AD 2004-13-03, it is possible that an engine with fewer than 5,800 hours TIS, but exceeding either the 200-hour or 6-month limit from the effective date of the AD, would have to be removed from service. The intent was that after 6 months from the effective date of the AD and up to 3 years from the effective date of the AD, engines be allowed to operate up to a maximum of 5,800 hours TIS. We have rewritten the second column for paragraph (g)(4) in Table 1 of this proposal as follows:

“Replace the engine that has the higher blade life at 5,800 hours TIS or 6 months after the effective date of this AD, whichever occurs later.”

We have also added a new paragraph (h) to this proposal as follows:

“(h) No engine may operate with a blade life exceeding 5,800 hours TIS, applicable beginning 6 months after the effective date of this AD.”

Paragraph (h) is More Restrictive Than the SB

One commenter requests that we revise paragraph (h) of AD 2004-13-03, so that it is not more restrictive than RR ASB No. 72-A184, dated January 2001, and is consistent with it.

We agree. The intent of paragraph (h) of AD 2004-13-03 was to remove all engines with blades exceeding 4,600 hours TIS, applicable within 3 years after the effective date of the AD. This wording is not clear and could apply to an engine, for example, with 1,000 hours TIS. This would force the engine off wing after 3 years while the engine may have only accumulated an additional 1,000 hours TIS, which is far short

of the intended life limit. It is important to delineate between the near term “drawdown” schedule which limits blade life to 5,800 hours TIS per Table 1, beginning at 6 months and continuing up to 3 years from the effective date of the AD, and the “objective” life limit of 4,600 hours TIS which begins at 3 years from the effective date of this AD. We have removed the existing paragraph (h) from this proposal and recodified the paragraphs. We have added a new paragraph (i) to this proposal as follows:

“(i) No engine may operate with a blade life exceeding 4,600 hours TIS, applicable beginning 3 years after the effective date of this AD.”

Relevant Service Information

We have reviewed and approved the technical contents of RR Alert Service Bulletin (ASB) 72-A184, dated January 2001, that describes procedures for managing engine configurations to reduce the risk of dual-engine shutdowns. The CAA classified this service bulletin as mandatory and issued AD 004-01-2001 in order to ensure the airworthiness of these RR engines in the UK.

Differences Between This Proposed AD and the Service Information

RR ASB 72-A184, dated January 2001, specifies the date of receipt of the ASB as the baseline for the compliance time. This proposed AD specifies the effective date of the AD as the baseline for the compliance time.

Bilateral Agreement Information

This engine model is manufactured in the UK and is type certificated for operation in the United States under the provisions of section 21.29 of the Federal Aviation Regulations (14 CFR 21.29) and the applicable bilateral airworthiness agreement. Under this bilateral airworthiness agreement, the CAA has kept the FAA

informed of the situation described above. We have examined the findings of the CAA, reviewed all available information, and determined that AD action is necessary for products of this type design that are certificated for operation in the United States.

FAA's Determination and Requirements of the Proposed AD

We have evaluated all pertinent information and identified an unsafe condition that is likely to exist or develop on other products of this same type design.

The unsafe condition described previously is likely to exist or develop on other RR Viper Mk.601-22 turbojet engines of the same type design. We are issuing this AD to prevent multiple failures of 1st stage turbine rotor blades that could result in a dual-engine shutdown. We are proposing this AD which would:

- Reduce the recommended class B life of certain 1st stage turbine blades, P/Ns V926000, V926293 and V926319, from 7,000 hours TIS to a mandatory life limit of 4,600 hours TIS, and
- Provide a drawdown schedule for engines with blades that have already exceeded the new reduced life limit.

Costs of Compliance

We estimate that 84 RR model Viper Mk.601-22 turbojet engines installed on airplanes of U.S. registry would be affected by this proposed AD. We estimate that no additional labor cost will be incurred to replace 1st stage turbine rotor blades when done at time of engine overhaul. A replacement set 1st stage turbine rotor blades costs about \$166,987. Based on these figures, we estimate the total cost of the proposed AD to U.S. operators to be \$14,026,950.

Regulatory Findings

We have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

1. Is not a “significant regulatory action” under Executive Order 12866;
2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
3. Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a summary of the costs to comply with this proposal and placed it in the AD Docket. You may get a copy of this summary at the address listed under ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the Federal Aviation Administration proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by removing Amendment 39-13684 (69 FR 34563, June 22, 2004) and by adding a new airworthiness directive, to read as follows:

Rolls-Royce (1971) Limited, Bristol Engine Division: Docket No. FAA-2004-18024; Directorate Identifier 2003-NE-39-AD. Supersedes AD 2004-13-03, Amendment 39-13684.

Comments Due Date

(a) The Federal Aviation Administration (FAA) must receive comments on this airworthiness directive (AD) action by [insert date 60 days after date of publication in the FEDERAL REGISTER].

Affected ADs

(b) This AD supersedes AD 2004-13-03, Amendment 39-13684.

Applicability

(c) This AD applies to Rolls-Royce (1971) Limited, Bristol Engine Division (RR) Model Viper Mk.601-22 turbojet engines. These engines are installed on, but not limited to, Raytheon HS.125 Series 600 and BH.125 Series 600 airplanes.

Unsafe Condition

(d) This AD results from comments received on AD 2004-13-03, that the AD is unnecessarily more restrictive than the requirements in the associated RR Alert Service Bulletin (ASB) No. 72-A184. We are proposing this AD to prevent multiple failures of 1st stage turbine rotor blades that could result in a dual-engine shutdown. The actions specified in this AD are intended to prevent multiple failures of 1st stage turbine rotor blades that could result in a dual-engine shutdown.

Compliance

(e) You are responsible for having the actions required by this AD performed within the compliance times specified unless the actions have already been done.

New Reduced Life Limit

(f) Change the RR Time Limits Manual life limit for the 1st stage turbine rotor blades, P/Ns V926000, V926293, and V926319, from 7,000 hours time-in-service (TIS) to 4,600 hours TIS.

(g) Limit the number of installed engines with 1st stage turbine rotor blades that exceed 4,600 hours TIS on the effective date of this AD as specified in the following Table 1:

Table 1 – Installed Engines

On the effective date of this AD, if	Then:
(1) Both engines installed on the airplane have 1 st stage turbine rotor blades that exceed 5,800 hours TIS.	Replace the 1 st stage turbine rotor blades in the engine that has the higher blade life within 50 hours TIS or 6 weeks after the effective date of this AD, whichever occurs first.
(2) One engine installed on the airplane has 1 st stage turbine rotor blades that exceed 5,800 hours TIS, and the other engine has 1 st stage turbine rotor blades that exceed 4,600 hours TIS.	Replace the 1 st stage turbine rotor blades in the engine that has the higher blade life within 100 hours TIS or 4 months after the effective date of this AD, whichever occurs first.
(3) One engine installed on the airplane has 1 st stage turbine rotor blades that exceed 5,800 hours TIS, and the other engine has 1 st stage turbine rotor blades with fewer than 4,600 hours TIS.	Replace the 1 st stage turbine rotor blades in the engine that has the higher blade life within 200 hours TIS or 6 months after the effective date of this AD, whichever occurs first.

On the effective date of this AD, if	Then:
(4) One engine installed on the airplane has 1 st stage turbine rotor blades that exceed 4,600 hours TIS, but have fewer than 5,800 hours TIS, and the other engine has 1 st stage turbine rotor blades with fewer than 4,600 hours TIS.	Replace the 1 st stage turbine rotor blades in the engine that has the higher blade life at 5,800 hours TIS or 6 months after the effective date of this AD, whichever occurs later.

(h) No engine may operate with a blade life exceeding 5,800 hours TIS, applicable beginning 6 months from the effective date of this AD.

(i) No engine may operate with a blade life exceeding 4,600 hours TIS, applicable beginning 3 years from the effective date of this AD.

Installation of Engines After the Effective Date of this AD

(j) After the effective date of this AD, do not install any engine that has 1st stage turbine rotor blades, P/Ns V926000, V926293, and V926319, that exceed 4,600 hours TIS, except as allowed in Table 1 of this AD.

Alternative Methods of Compliance

(k) The Manager, Engine Certification Office, has the authority to approve alternative methods of compliance for this AD if requested using the procedures found in 14 CFR 39.19


Material Incorporated by Reference

(l) None.

Related Information

(m) Civil Aviation Authority airworthiness directive AD 004-01-2001, dated January 2001, also addresses the subject of this AD.

Issued in Burlington, Massachusetts, on October 25, 2004.



Francis A. Favara,
Acting Manager, Engine and Propeller Directorate,
Aircraft Certification Service.